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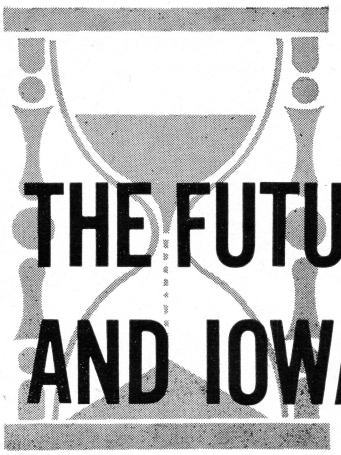
Gene Futrell
Iowa State University



THE FUTURE FOR HOGS... AND IOWA'S ROLE

Projections to 1975 of national pork demand, hog production, and slaughter indicate a 10% increase over the 1962-64 average hog production. Iowa is projected to maintain, or increase slightly, its hog production share.

by Gene Futrell

HOGS have been a major source of Iowa farm income for many years. Iowa has usually been the nation's largest hog producing state – accounting for around a fifth of the nation's annual production.

In 1963, cash receipts from hogs sold from Iowa farms totaled $712 million. This was 27 percent of total cash receipts from Iowa farm marketings. In the same year, the 20.5 million head of Iowa hogs produced accounted for nearly 23 percent of the total United States production.

The relative importance of hogs in the agriculture of Iowa and the nation has declined slightly during the past 30 years. Receipts from the sale of hogs in selected years, as a percent of total cash receipts from farm marketings, were as follows:

	1929	1939	1955	1963
United States	11.5%	10.3	9.2	8.2
Iowa	36.5%	29.1	31.0	26.8

The decline in the relative position of hogs concerns hog producers. Hogs have been a fairly consistent profit maker and "mortgage lifter" for Iowa farmers for many years. But what are the future prospects for pork and for the hog industry? In this article, we'll look at demand possibilties and probable pork requirements in the future. We'll also look at probable changes in the size and nature of hog producing units, trends in cyclical and seasonal production and price patterns, and the probable geographic location of hog production by 1975.

Future Demand for Pork . . .

Per Capita Consumption. Pork consumption and price changes in the past two decades indicate some decline in per capita demand for pork. Average per capita consumption is a little below earlier levels. Retail pork prices have also trended lower – in real terms and in relation to its main competitor, beef. More striking is the change in the relative position of pork with respect to consumption of both beef and poultry.

These changes are illustrated by the data in table 1. While per capita consumption of pork has declined moderately, consumption of beef and poultry has gone up sharply. As a result, pork now accounts for a much smaller share of total meat and poultry use.

The divergent trends in the demand for pork and beef have been the subject of considerable research and discussion during recent years. Research by the U. S. Department of Agriculture indicate that per capita consumption of pork declined by 0.7 percent per year from 1947 through 1962. This decline in pork use was not steady. Most of it occurred from 1947 through 1954– a period when both consumption per person and retail pork prices trended lower. Since 1954, the year to year variations in consumption and price show no definite trend.

Demand for pork had previously shown some decline during the 1930's. However, per capita consumption rebounded during the World War II years. Since pork production could be increased fairly quickly to meet war-time demands, consumption was unusually high during this period.

Pork consumption and price levels in recent years, combined with other considerations, suggests that *pork demand may not decline as rapidly in the years ahead as it did in the 1947-62 period.*

Several factors that contributed to the decline in pork consump-

TABLE 1. Per Capita Consumption of Meats and Poultry.

Year	Pounds per capita[a]			Percent of total meats & poultry		
	Beef	Pork	Poultry	Beef	Pork	Poultry
1925	60	74	14	37	46	9
1930	49	67	17	34	46	12
1935	53	48	15	40	36	11
1940	55	74	17	35	46	11
1945	59	67	25	35	39	15
1950	63	69	25	37	41	15
1955	82	67	26	43	35	14
1960	85	65	34	44	33	18
1961	88	62	38	44	31	19
1962	89	64	37	44	32	18
1963	94	65	38	45	31	18
1964 Est.	100	64	38	47	30	18

[a]Beef and pork in terms of carcass weight; poultry (chicken and turkey) in ready-to-cook weight.

GENE FUTRELL is assistant professor of agricultural economics and extension economist.

tion may have largely run their course. Population migration from East to West and from farm to cities is likely to take place at a reduced rate, moderating any changes in consumption related to region and urbanization. (Historically, the farm population and families in the South and Midwest are larger pork users than urban families and those in other geographic regions).

Quality improvement in pork – both past and future – may also slow the decline in pork demand. A part of the increase in demand for beef relative to pork in recent years has been attributed to the increased use of home freezers, to desirable display attributes of beef for self-service meat retailing, and to increased retail promotion of beef. If these factors have had an adverse effect on pork demand, they may have already exerted their greatest influence.

Per capita use of beef in this country tends to increase relatively more than pork as average incomes rise. Consequently, rising per capita incomes in this country have been an additional factor in raising the demand for beef relative to pork – thereby encouraging an expansion in beef output. Further sizable gains in average incomes are expected in the years ahead. Although this will strengthen demand for pork, the impact on beef demand will probably continue to be greater. Basic consumer preference for beef has also increased in recent years and is expected to show further gains in the years ahead.

We used two trends to obtain an indication of possible pork use in 1975 – declining preference for pork and increasing incomes. Because of changing preferences, we assumed that on a per capita basis consumers would tend to eat about 0.9 percent less pork a year during the 1965-75 period. But, we also figured that consumers' incomes would rise enough to increase pork purchases about 0.6 percent each year. Combining these two opposing forces, we think the net effect will be a decline in per capita consumption of about 0.3 percent a year.

With this rate of change, we estimate that per capita consumption of pork in 1975 will be about 58 pounds, carcass weight. Actual consumption per person since 1954 has ranged from 60 to 67 pounds.

Total Pork Consumption. We used estimated 1975 per capita pork consumption of 58 pounds and projected 1975 population in the continental United States to estimate total consumption of pork in 1975. The Bureau of Census Series C population projection for 1975 of 220 million people was used. This is a projected population level intermediate between the high and low projected ranges, but tending to the low side.

This combination of population and per capita consumption would mean total pork consumption in 1975 of 12.8 billion pounds, carcass weight. *This would be a net increase of approximately 10 percent over average pork production during the 1962-1964 period.*

Distribution of 1975 Hog Production. Changes in state and regional shares of total hog production for the periods 1950-52 and 1960-62 were examined for an indication of future changes in the location of hog production. This revealed that the North Central states generally, and Iowa in particular, have more than held their own in hog production. Major regional changes in these periods were a moderate increase in the proportion of hogs raised in the North Central states and a decline in the proportion produced in the South Central states. Decreases also occurred in the North Atlantic, Mountain and Pacific Coast states.

On the basis of these observed changes, as well as feed grain supply considerations, it is likely that regional shifts in hog production by 1975 will not be great. But some changes are likely. The North Central states are likely to increase moderately their share of total hog production, and a slight increase is estimated in the South Atlantic states. Slight decreases are projected for all other regions.

The geographical distribution of hog production is presented in table 2. Included are data for the periods 1950-52 and 1960-62 as well as projections for 1975. Iowa hog production as a percent of the United States total is projected to increase only slightly. In actual volume, 1975 production in Iowa is projected at approximately 3.0 billion pounds of carcass pork, about 5 percent more than the 1963 output.

More comprehensive and detailed projections of regional and state production of hogs will be provided by forthcoming research conducted by the North Central Regional Livestock Marketing Research Committee.

Hog Slaughter in 1975. The projections for 1975 suggest that

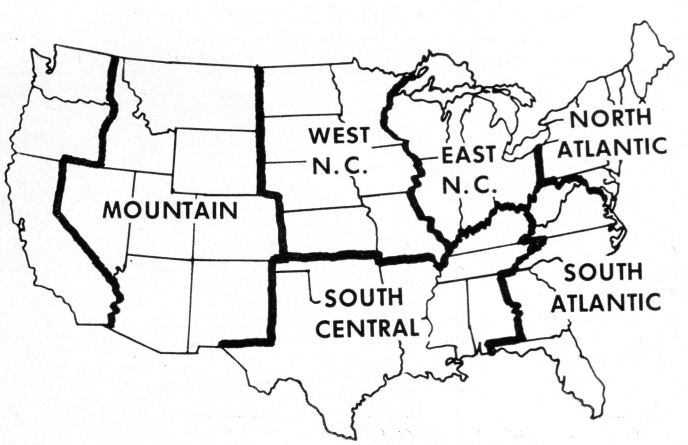
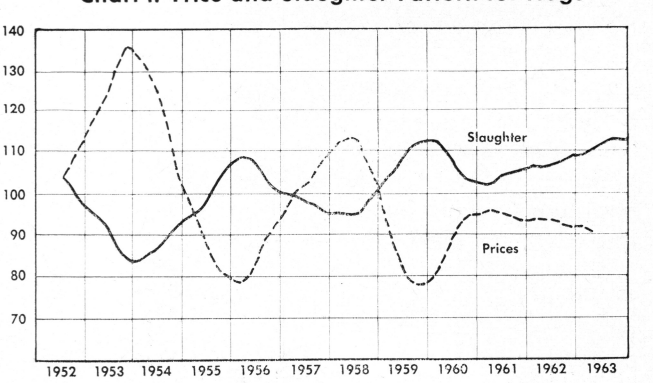


Chart 1. Price and Slaughter Pattern for Hogs



future hog production will be even more concentrated in the Corn Belt. This may have implications for future slaughter activity. Table 3 shows the regional distribution of hog slaughter for 1950-52 and 1960-62. Also included are the proportions slaughtered in each of the North Central states and Kentucky as well.

Table 4 summarizes the regional distribution of hog production and slaughter for 1962. This shows the North Atlantic states and the Western states now import sizable numbers of live hogs for slaughter to meet pork consumption demand. This is true to a lesser extent in the South Atlantic and South Central states. By contrast, hog slaughter in the North Central states in 1962 was materially below the volume produced in that region. Slaughter in Illinois was considerably below production. Indiana, Iowa, Missouri and the Dakotas were other states producing more hogs than were slaughtered within the state. Michigan, Minnesota, and Wisconsin combined, Kansas and Nebraska combined and Ohio all had slaughter in excess of their own production.

In view of economies in transporting carcass meat rather than live animals, this suggests a good possibility for further gradual changes in the location of hog slaughter activity. Declines in relative hog slaughter activity are likely in the North Atlantic and Western states. Increases appear most likely in certain of the North Central states.

TABLE 2. United States Hog Production, by Regions.

Region	1940-42 Average	1950-52 Average	1960-62 Average	Projected 1975
	(Percent of U.S. Total)			
North Atlantic	2.4	2.2	1.7	1.3
South Atlantic	5.9	6.3	6.3	6.5
North Central	75.2	77.9	80.6	82.6
East North Central	(30.7)	(30.2)	(32.6)	
West North Central	(44.5)	(47.7)	(48.0)	
Iowa	(19.7)	(22.9)	(22.7)	(23.0)
South Central	12.4	11.0	9.3	7.9
Mountain	2.1	1.4	1.1	0.9
Pacific	2.0	1.2	1.0	0.8

TABLE 3. United States Hog Slaughter by Regions and Selected States. Averages 1950-52 and 1960-62.

Regions and States	1950-52 Average	1960-62 Average
	(Percent of U. S. Total)	
North Atlantic	10.9	9.3
South Atlantic	6.0	7.9
North Central	67.3	66.5
East North Central	(27.4)	(24.4)
Indiana	(4.7)	(6.2)
Illinois	(10.6)	(6.6)
Michigan	(2.5)	(2.1)
Ohio	(5.5)	(5.4)
Wisconsin	(4.1)	(4.1)
West North Central	(39.9)	(42.1)
Iowa	(15.5)	(18.2)
Kansas	(3.9)	(3.6)
Minnesota	(7.8)	(7.1)
Missouri	(5.1)	(4.9)
Nebraska	(4.4)	(5.4)
North Dakota	(.3)	. . .
South Dakota	(2.9)	(2.9)
South Central	8.9	10.5
Kentucky	(1.3)	(1.9)
Mountain	2.2	2.1
Pacific	4.7	3.7

Hog Production Units . . .

These broad projections of the size and location of the hog industry suggest a moderate increase in the total number of hogs produced in this country by 1975. Next, what about the future size of production units and the nature of production patterns?

First of all, hog operations are likely to become smaller in number, more specialized and to increase in average size. This would continue recent changes in the hog producing industry. Some evidence of past change in the size of hog operations is found in Census of Agriculture data. The following changes in the average number of hogs sold per farm occurred between 1944 and 1959:

Average Number of Hogs Sold Per Farm Annually

	United States	*North Central States*
1944	32	43
1949	31	46
1954	40	57
1959	64	89

In 1954, around 10 percent of the farms reporting hog sales sold 100 or more hogs. This had increased to around 20 percent by 1959. Further changes in this direction have no doubt occurred since 1959. Despite growing specialization and size of hog operations, hog production is expected to remain largely in the hands of individual farmers, rather than becoming a highly integrated operation such as broiler production.

Production Cycles . . .

The recent history of the hog industry suggests that cyclical swings in production will be relatively mild in the years ahead. Hog production during recent years has become more stable than in earlier periods. Year-to-year changes in production in the future are likely to be moderate – probably comparable to changes between 1961 and 1964.

Cyclical production and price swings have become more moderate and of shorter duration as shown in Chart I. Here a 12-month moving average of hog production and prices is presented in

index form, with the 1952-62 average as the base. The wide swings in production and price of the '50's shows signs of reducing to mild and gradual changes in the '60's.

Specialized hog enterprises and the larger average size of commercial hog producing operations tend to stabilize production. Investments are larger, and facilities are more specialized, cutting down on the individual producer's flexibility to move in and out of the hog business or to make substantial year-to-year production changes.

In addition, hog producers are likely to become increasingly alert to technological changes in the business and also more keenly aware of their production costs and profit potential at particular times. Under these conditions, production response to relatively favorable prices may be quite rapid – though moderate.

If we assume that production cycles in hogs are largely generated by recent price and profit experience and by profit expectations, we can also expect hog prices to be relatively stable in the next several years. Prices are not likely to be high enough for sufficiently long periods of time to encourage large production increases. Neither are they likely to drop low enough for sustained periods to encourage specialized hog producers to substantially reduce production. The level of prices may be relatively low by past measures, probably ranging between $14 and $17 per hundred pounds most of the time at midwest markets.

Seasonal Price Patterns . . .

The seasonal pattern of sow farrowing shifted substantially during the late 1940's and early '50's, as increased farrowings during the winter and early summer months smoothed out the seasonal pattern. The last few years have brought further shifts in the seasonal pattern of farrowing, including a sizable increase in fall crop farrowings as a proportion of the total yearly pig crop. These changes in the monthly and quarterly distribution of farrowings are shown in table 5.

Changes in the past four years have been comparatively slight. The seasonal farrowing pattern may stabilize near the present distribution. Market and cost considerations seem likely to limit further increases in winter and early summer farrowings.

In Summary . . .

Total pork demand is expected to increase moderately during the next ten years, with population growth more than offsetting a small drop in per capita consumption. The relative position of pork in the total meat and poultry picture however, may decline further.

No substantial changes are expected in the regional location of hog production. Production will continue to be heavily concentrated in the North Central states. Iowa is expected to retain its present share of the nation's production – around 23 percent of the total.

Individual hog operations are expected to become larger and more specialized. But they will probably continue to be individually controlled farm operations rather than highly integrated operations. Year-to-year changes in production and prices are likely to be comparatively small – similar to those of recent years but less pronounced than in the 1940's and 1950's. The seasonal pattern of farrowings appears to have stabilized after smoothing out considerably during the late '40's and '50's.

TABLE 4. Distribution of Hog Production and Hog Slaughter for 1962.

Region and State	Hog Production[a]	Hog Slaughter[b]
	(Percent of U.S. Total)	
North Atlantic	1.6	8.1
South Atlantic	6.1	8.2
West	2.2	5.5
South Central	9.1	10.8
Kentucky, Tennessee	(4.0)	(5.0)
North Central	81.0	67.4
Illinois	(14.1)	(7.2)
Indiana	(9.5)	(6.4)
Iowa	(22.6)	(18.0)
Michigan	(1.3)	(2.1)
Minnesota, Wisconsin	(10.5)	(11.1)
Missouri	(7.0)	(5.1)
Kansas, Nebraska	(7.4)	(9.3)
North Dakota, South Dakota	(4.2)	(3.4)
Ohio	(4.6)	(4.8)

[a]Hog marketings plus farm slaughter, adjusted to equal total U. S. hog slaughter.
[b]Commercial hog slaughter plus farm slaughter.

TABLE 5. Monthly and Seasonal Distribution of Sow Farrowings, United States.

Month and Quarter	1947-49	1957-59	1961-63
	Percent of Yearly Total		
December	2	3	4
January	3	6	6
February	6	11	10
December-February	11	20	20
March	18	15	13
April	22	14	13
May	11	8	8
March-May	51	37	34
June	5	6	7
July	4	7	7
August	8	10	10
June-August	17	23	24
September	12	11	11
October	6	6	7
November	3	3	4
September-November	21	20	22